

## ABSTRACT

A reference signal embedded in a multi-color two-dimensional bar code received from the Internet is referred to. The adjustment of colors of an output picture image is optimized. Furthermore, when the recognition fails, the tint is readjusted by feedback and the recognition rate in a portable terminal is improved. This configuration improves the recognition rate of a picture image at the portable terminal of a multi-color two-dimensional bar code received from the Internet, and makes it possible to transmit a large amount of data information from television to the portable terminal for a short time.